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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/796,512	03/08/2004	Yung-Chieh Hsieh	OC-P7	1929

7590

06/27/2005

John P. Wooldridge  
252 Kaipii Pl.  
Kihei, HI 96753

EXAMINER
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HASAN, MOHAMMED A

ART UNIT	PAPER NUMBER
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2873

DATE MAILED: 06/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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<b>Office Action Summary</b>	<b>Application No.</b> 10/796,512	<b>Applicant(s)</b> HSIEH, YUNG-CHIEH	
	<b>Examiner</b> Mohammed Hasan	<b>Art Unit</b> 2873	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1 - 10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

### *Oath/Declaration*

1. Oath and declaration filed on 8/31/2004 is accepted.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1- 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out distinctly claim subject matter which applicant regards as the invention.

In regard to independent claim 1 is rendered indefinite by the use of term "coating is approximately symmetrical ". The only support for the use of terms is found in the specification " a symmetric coating" (page 1, paragraph 0014). The aforementioned phrase is meaningless and the aforesaid claim rendered indefinite.

Claims 2 - 10 depend from claim 1, therefore rendered indefinite.

Regarding claims 2, 6 , and 10 rendered indefinite by the use of term " $\Psi_{SR} - \Psi_{SR'} = \Psi_{PR} - \Psi_{PR'}$ " and a phase matching condition such that " $\Psi_{SR} - \Psi_{SR'}$ " and " $\Psi_{PR} - \Psi_{PR'}$ " is about equal to zero. Claims did not defined  $\Psi_{SR}$  ,  $\Psi_{SR'}$ ,  $\Psi_{PR}$  , and  $\Psi_{PR'}$ .

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3- 5, and 7- 9 are rejected under 35 U.S.C. 102 (b) as being anticipated by Fye (4,431,258).

Regarding claim 1, Fye discloses (refer to figure 1) a unpolarized beam splitter (UBS) (11) comprising an internal beam splitting coating (12) that is symmetrical (column 4, lines 21 – 31, column 1, line 50).

Regarding claim 3, Fye discloses (refer to figure 2) wherein UBS (33) is operatively located in an optical interleaver and is therein configured to separate an incident beam of light into a first beam of light and a second beam of light (i.e.,  $\lambda_1, \lambda_2$ ) (column 4, lines 63 – 65 ).

Regarding claim 4, Fye discloses, the phase difference between first beam and second beam is independent of the polarization status of incident beam (column 4, lines 63 – 65).

Regarding claim 5, Fye discloses (refer to figure 1) wherein an optical interleaver further comprises a reflector (13) operatively positioned to reflect first beam of light to produce a first reflected beam ( $\lambda_1$ ) and a non-linear phase generator (NLPG) operatively positioned to reflect second beam of light to produce a second reflected

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beam , wherein first reflected beam and second reflected beam interfere with one another , wherein the frequency dependence of the phase difference of first reflected beam and second reflected beam has a step-like function (column 4, lines 21 – 43) .

Regarding claim 7, Fye discloses (refer to figure 1) wherein UBS (11) is operatively located in an interferometer (as shown in figure 1) and is therein configured to separate an incident beam of light into a first beam of light and a second beam of light ( i.e.,  $\lambda_1, \lambda_2$ ) (column 4, lines 21 – 43).

Regarding claim 8, Fye discloses, the phase difference between first beam and second beam is independent of the polarization status of incident beam (i.e.,  $\lambda_1, \lambda_2$ ) (column 4, lines 63 – 65).

Regarding claim 9, Fye discloses (refer to figure 1) a unpolarized beamsplitter (UBS) (11) comprising an internal beam splitting coating (12) having a structure that looks about the same to a beam propagating through it from either side of coating (column 4, lines 21 – 25).

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art

Kobayashi et al (4,627,688) discloses, a beam splitter.


Li ( US 2002/0012168 A1) discloses , a high isolation optical switch, isolator or circulator having thin polarizing beam-splitters.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH  
June 23,2005

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800